northwest Clean Air agency

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Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	February 12, 2015	Incident type: breakdown/ upset/startup or shutdown	Breakdown
Start Date	February 12, 2015	Start Time:	2:00 PM
End Date	February 12, 2015	End Time:	3:00 PM
Process unit or system(s): Flare			

Incident Description

On February 12, 2015 high H2S occurred in the flare due to a sour gas stream leaking into the sweet flare header. The sour gas originated from Liquid Mover 21NG72, a system designed to remove liquids from the plant fuel gas line. The vent line for this liquid mover is normally routed to the sour flare line but the primary system was out of service for repair. Therefore, a temporary line was routed to an alternate system that vented to the sweet flare. After the event the liquid mover was removed from service and inspected to determine the cause of the equipment failure. The inspection did not reveal a specific failure point. Therefore, the exact cause of this event could not be determined. The liquid mover system has been isolated from service to prevent a reoccurrence.

The volume of sour gas vented was very low but contain a high concentration of H2S. This resulted in very low pounds of emissions but a longer period of high H2S readings.

This event resulted in 2 periods above the 162ppm H2S 3-hour rolling average limit.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

The FGR system was operating to recovery as much excess flare gas as possible.

Applicable air operating permit term(s): 5.11.8

Estimated Excess Emissions:	Pollutant(s):	Pounds (Estimate):
Based on online H2S CEMS and fuel gas flow meters	SO2	1

The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☒ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

☒ No
☐ Yes (provide details below)

Root and other contributing causes of incident:

The root cause of this event was related to the liquid mover system 21NG72 but a specific cause could not be determined.

The root cause of the incident was:
(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

☐ Identified for the first time
☒ Identified as a recurrence (explain previous incident(s) below – provide dates)

The root cause of this event was related to the liquid mover system 21NG72 but a specific cause could not be determined. High H2S readings occurred in the flare on April 18, 2013 due to a liquid mover system failure.

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

☐ No
☒ Yes (describe below)

The root cause of this event was related to the liquid mover system 21NG72 but a specific cause could not be determined.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2
Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The liquid mover system was inspected and cleaned.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒No ☐Yes
Is the source requesting additional time for completion of the report? ☒No ☐Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Tim Figgie Date: _ March 17, 2015

Responsible Official or Designee: _____ Date: March 30th, 2015